

REMARKS

The Office has maintained the rejection of claims 1-7 and 9-16 under 35 U.S.C. 103(a) as being unpatentable over Mori, JP 2000-012088 (hereinafter: "Mori").

THE DISCLOSURE OF MORI DOES NOT SUPPORT THE LIMITATIONS IDENTIFIED BY THE OFFICE

The Office cites "sect." (paragraph?) 0059 of Mori as disclosing the following:

(1) sintering under a non-oxidizing atmosphere (Action, page 2, line 4 from the bottom of the page);

(2) particles and binder are uniformly mixed and distributed (Action, page 2, last line, to page 3, line 1); and

(3) binder remains after sintering (Action, page 3, line 6). However, paragraph [0059] merely describes preparing a negative electrode paste (refer to the last line of paragraph [0059]).

If the Office maintains the final rejection of claims 1-7 and 9-16, it is respectfully requested to identify (by line number) the support in paragraph [0059] for items (1)-(3) above.

THE COMPARATIVE DATA IN THE SPECIFICATION PROVIDE EVIDENCE OF NON-OBVIOUSNESS SUFFICIENT TO REBUT ANY *PRIMA FACIE* OBVIOUSNESS SUPPORTED BY MORI

The data of Table 1 of the present application demonstrate criticalness of the mean diameter of the primary particles of the active material particles of the negative electrode of the present

invention. Specifically, the data of Table 1 show that battery A1 prepared using a silicon powder (active material a1) in which the mean diameter of the primary particles was 270 nm (0.27 μ m) and battery A2 prepared using a silicon powder (active material a2) in which the mean diameter of the primary particles was 0.8 μ m had significantly longer cycle lives as compared to battery B1 prepared using a silicon powder (active material b1) in which the mean diameter of the primary particles was 1 ~ 5 μ m (within the range of particle size of 0.01-100 μ m stated in the Action to be supported by Mori).¹

The data of Table 3 demonstrate criticalness of sintering of the active material layer of the negative electrode. Specifically, the data of Table 3 show that a battery (battery A1) which was prepared by sintering the negative electrode at 400°C for 30 hours had significantly better cycle characteristics as compared to a battery (battery B3) prepared without sintering of the negative electrode. The data of Table 3 also show that a battery (battery A5) in which the electrode was sintered at 600°C for ten hours had significantly reduced cycle characteristics as compared to battery

¹It is noted that the negative electrode used to prepare battery B3 was dried at a temperature of 100°C.

A1. It is believed that the binder was decomposed by the heat treatment at 600°C.²

The data of Tables 1 and 3 are evidence of non-obviousness and demonstrate the patentability under 35 U.S.C. § 103(a) of claims 1-7 and 9-16 over Mori.

For the above reasons, removal of the 35 U.S.C. § 103(a) rejection of the claims over Mori is believed to be in order and is respectfully solicited.

The foregoing is believed to be a complete and proper response to the Office Action dated October 19, 2006, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

² Applicants also note that the data of Table 3 are evidence that sintering imparts distinct "structural" characteristics to the negative electrode of the present invention and, therefore, should be considered when assessing the patentability of the present claims.

PATENT APPLN. NO. 10/673,348
RESPONSE UNDER 37 C.F.R. § 1.116

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In the event any additional fees are required, please also
charge our Deposit Account No. 111833.

Respectfully submitted,
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